

HEINE SAFETY BOILER CO.

General Offices

2449 EAST MARCUS AVENUE
ST. LOUIS, MO.

Shops

ST. LOUIS, MO.

PHOENIXVILLE, PA.

Branch Offices

NEW YORK

11 Broadway

BOSTON

50 Congress Street

PHILADELPHIA

Pennsylvania Bldg.

PITTSBURGH

Fulton Bldg.

CINCINNATI

Union Trust Bldg.

CHICAGO

Lytton Bldg.

Representatives

DENVER

Stearns-Roger Mfg. Co.

1718 California Street

SAN FRANCISCO

Dorward Engineering Co.

Hooker & Lent Bldg.

DALLAS

Smith and Whitney

Southwestern Life Bldg.

NEW ORLEANS

J. S. Barelli

Godchaux Bldg.

CHARLOTTE, N. C.

Alexander & Garsed

MONTEREY, MEXICO

Sanford & Co.

YOKOHAMA, JAPAN

Takata & Co.

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HEINE SAFETY BOILER CO.

St. Louis, Mo.

HELIOS

Source of All Power! Fountain of Light and Warmth!

Adored by the ancient husbandman as the God who blessed his labors with a harvest of golden grain; revered by the early sage as the great visible means of the divine creative force; pictured by the inspired artist as the tireless charioteer who drives his four fiery steeds daily across the heavens, his head circled by a crown of rays, his chariot wheel the disk of the sun itself.

When primeval man began to think, the sun seemed to him the cause of all those wonders in nature which ministered to his simple wants, or taught his soul to hope. His crude feelings of awe and gratitude blossomed into worship, and we find the sun as central figure in all early religions. He was the Suraya of the Hindoos, the Baal of the Phoenicians, the Odin of the Norsemen, and his temples arose alike in ancient Mexico and Peru. As Mithras of the Parsees, he was adored as the symbol of the Supreme Deity, his messenger and agent for all good. As Osiris he received the worship and offerings of the Egyptians, whose priests, early adepts in the rudiments of science, saw in him the cause of the annual fructifying overflow of the Nile.

Modern knowledge, with its vast array of facts and figures, can but verify and seal the faith of these ancient observers. What they dimly discerned as probable is now the central fact of physical science. From him are derived all the forces of nature which have been yoked into the service of man. All animal and plant life draws its daily sustenance from the warmth and light of the sun, and it is but his transmuted energy we expend, when, with muscle of man or horse, we load our truck or roll it along the highway.

Do we irrigate the soil from the pumps of a myriad windmills? His rays, on plains far inland, supply the energy for the breeze which turns their vanes. Does a lumbering wheel drive a dozen stamps and a primitive arastra in some Mexican canyon? Do mighty turbines whirl a million flying spindles and shake thousands of clattering looms on the banks of some New England stream? From the bosom of the ocean and the swamps of the tropics, Helios lifted those vapory Titans whose lifeblood courses in the mountain torrent and the river of the plain. Do a hundred cars rattle up the steep streets of the smiling city by the Golden Gate? Are massive ingots of steel forged to shape and size by the giant hammers of Bethlehem? The fuel which gives them motion was stored for us, ages before man was evolved, by the rays which flash from his chariot wheels! "The heat now radiating from our fire places has at some time previously been transmitted to the earth from the sun. If it be wood that we are burning, then we are using the sunbeams that have shone on the earth within a few decades. If it be coal, then we are transforming to heat the solar energy which arrived at the earth millions of years ago."

and the surrounding illumination are sources of considerable error. Table No. 18 gives a schedule for judging temperatures in this way.

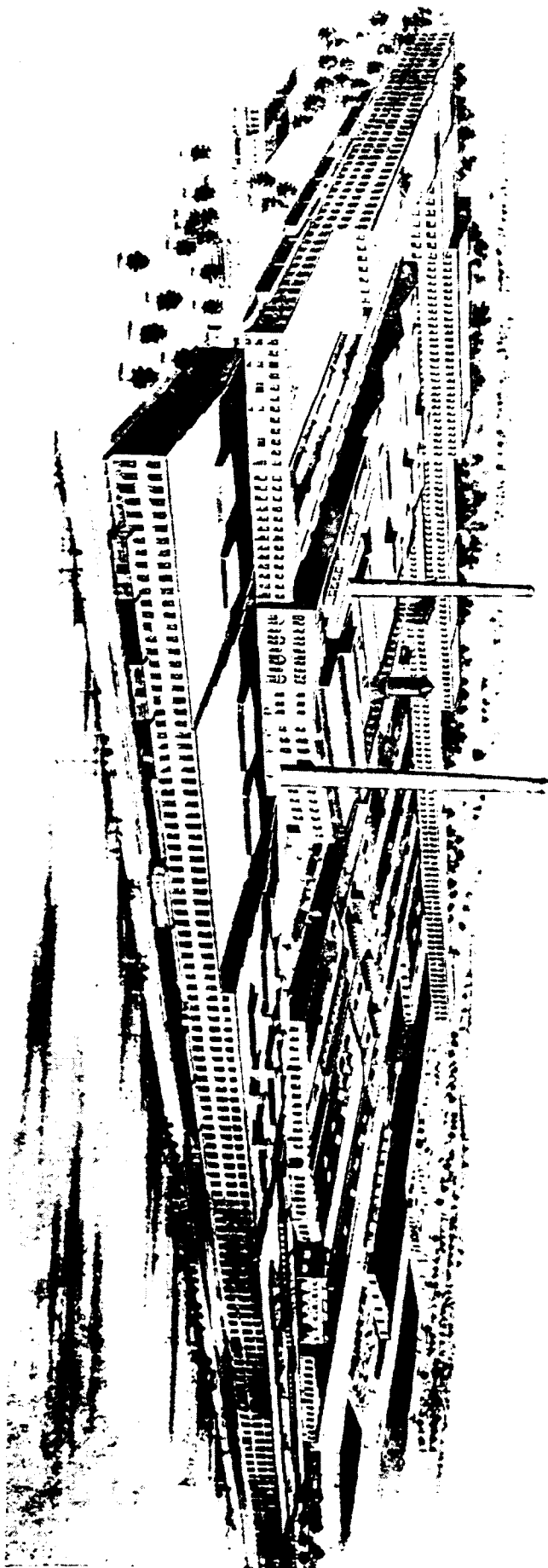
Table No. 18
POUILLET COLOR SCHEDULE.

Appearance	C	F
Incipient red heat.....	525°	977°
Dull " "	700°	1292°
Incipient red cherry heat.....	800°	1472°
Red cherry heat.....	900°	1652°
Clear red cherry heat.....	1000°	1832°
Deep orange heat.....	1100°	2012°
Clear " "	1200°	2192°
White " "	1300°	2372°
Bright white heat.....	1400°	2452°
Dazzling.....	1500°	2732°
	1600°	2912°

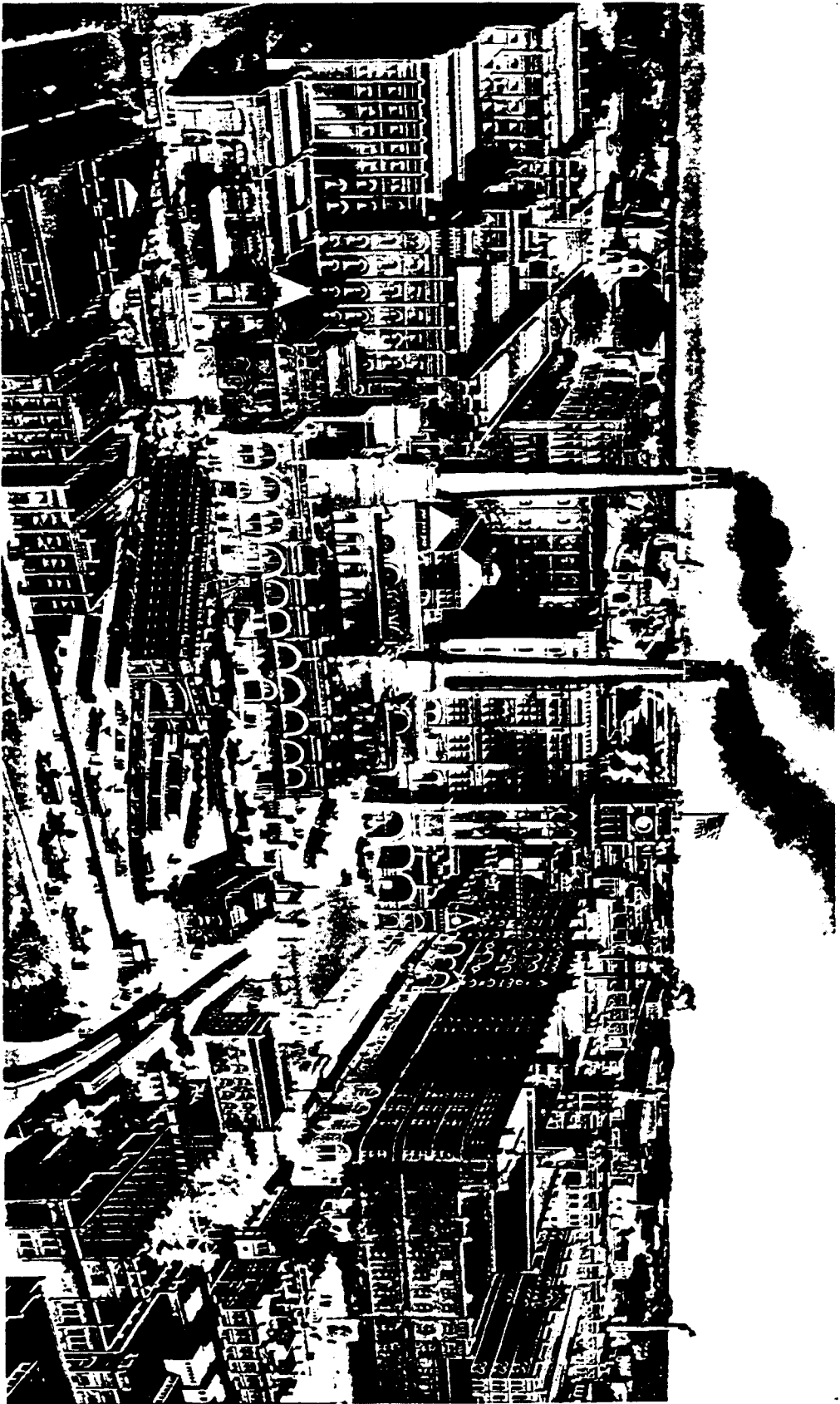
The comparatively recent development and perfection of the various heat measuring devices employing thermo-couples and of the radiation thermometers, has resulted in considerable changes in what have heretofore been considered the true temperatures of many metallurgical processes, which are now found to take place at lower temperatures than have long been considered accurate. A continued use of these more reliable means will inevitably result in the remodeling of the various tables which have been published and accepted for many years, giving the melting points of various metals and alloys.



KELLY AXE MANUFACTURING CO., CHARLESTON, W. VA.,
CONTAINS 2400 H. P. OF HEINE BOILERS.

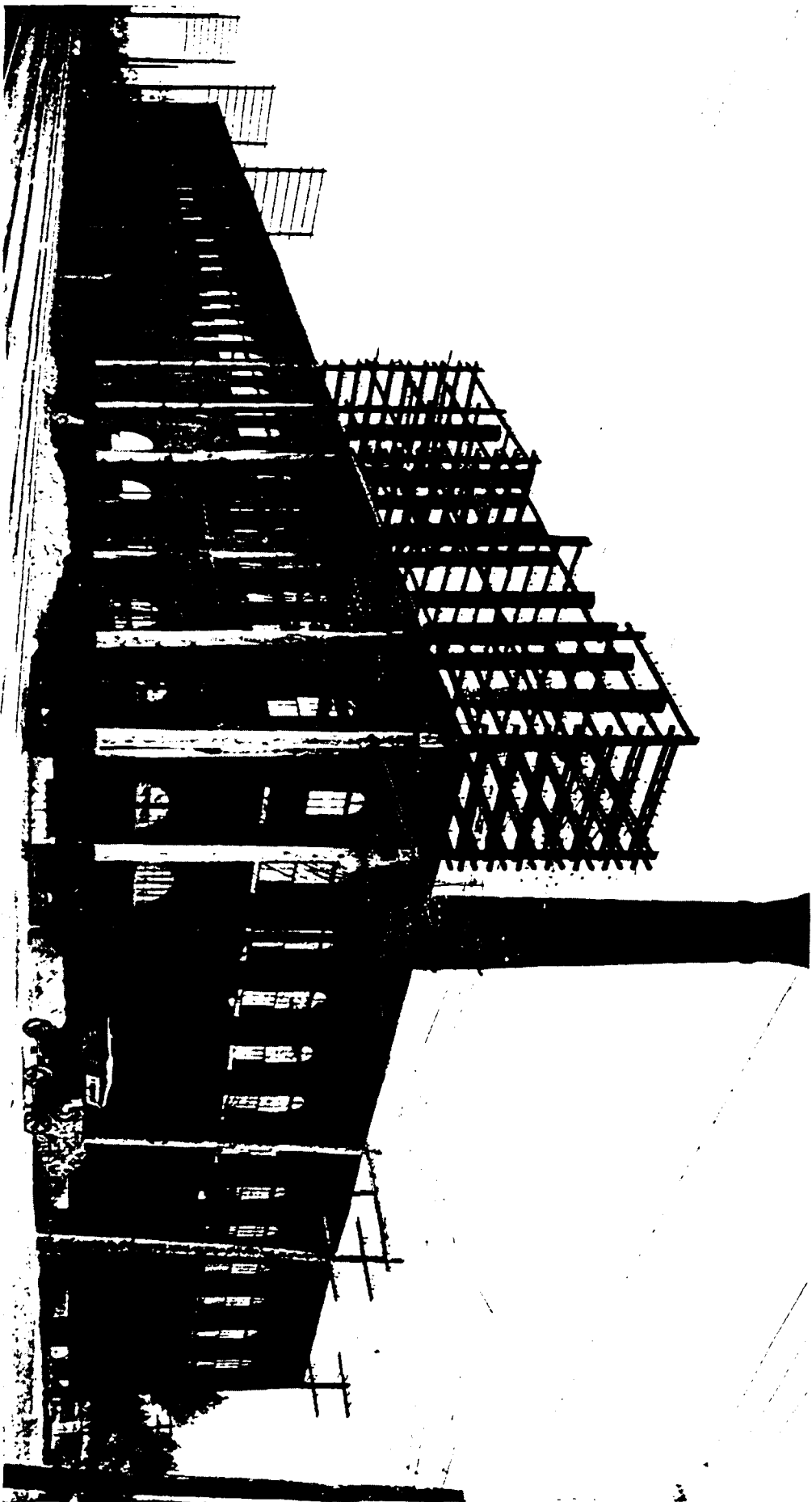


CHAMPION COATED PAPER CO., HAMILTON, O., CONTAINS 3850 H. P. OF HEINE BOILERS.



ANHEUSER-BUSCH BREWERY, ST. LOUIS, MO., CONTAINS 14 000 H. P. OF HEINE BOILERS.

DENVER GAS AND ELECTRIC LIGHT CO., DENVER, COL., CONTAINS 7000 H. P. OF HEINE BOILERS.





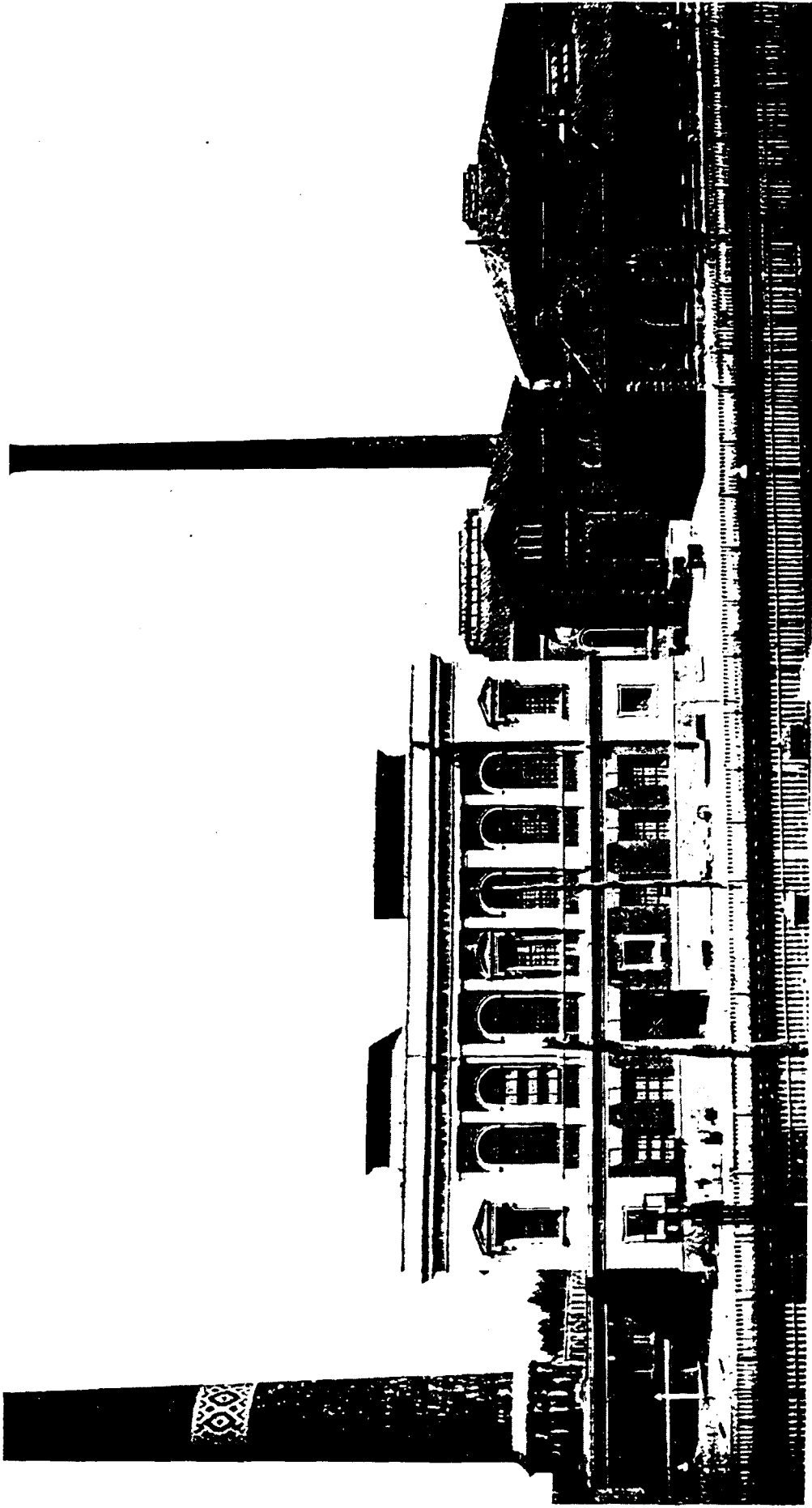
OLD NATIONAL BANK BUILDING, SPOKANE, WASH.,
CONTAINS 500 H. P. OF HEINE BOILERS.

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RIDGEWOOD PUMPING STATION, BROOKLYN, N. Y., CONTAINS 2400 H. P. OF HEINE BOILERS.

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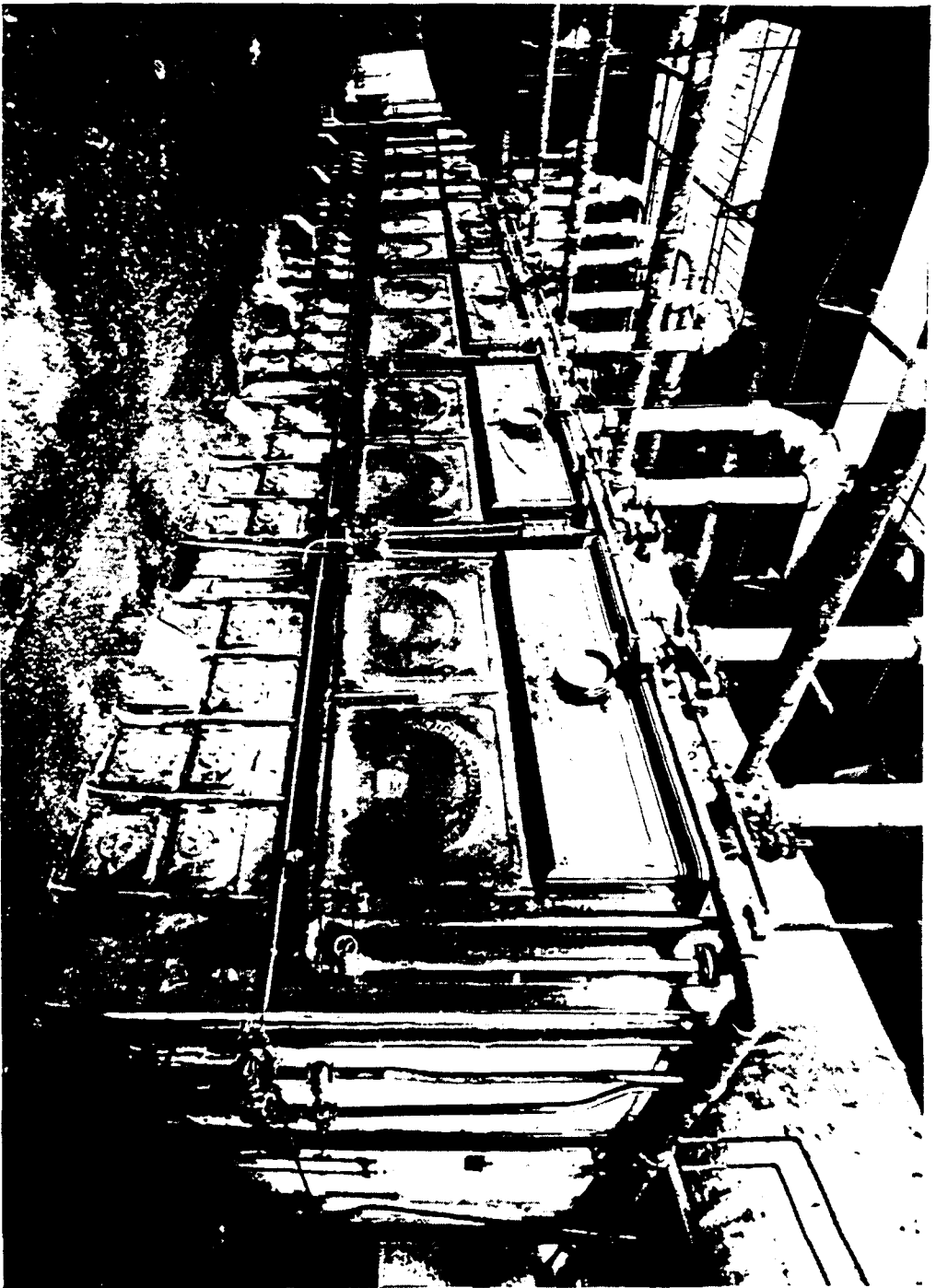
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FOUR 302 H. P. HEINE BOILERS, MONOMAC SPINNING CO., LAWRENCE, MASS.



SEVEN OF TEN 320 H. P. HEINE BOILERS, WARREN MFG. CO., WARREN, R. I.



BETZ BUILDING, PHILADELPHIA, PA.,
CONTAINS 750 H. P. OF HEINE BOILERS.



CLARIDGE HOTEL, NEW YORK, N. Y.,
CONTAINS 720 H. P. OF HEINE BOILERS.